REVISED 08/07

LSUE COURSE SYLLABUS

| **I.** | **Mathematics 1552** | **Instructor: Mathematics Faculty** |

| **II.** | **Course description from the current LSUE catalog:** |

Analytic Geometry and Calculus II. Lec. 4; Cr. 4.
Conics, arc length, transcendental functions, coordinate systems, infinite series,
Prerequisite: A grade of C or better in Mathematics 1550.

| **III.** | **Textbook(s) and other required materials:** |

Calculus: Early Transcendentals, 6th edition by James Stewart.
A graphics calculator is required in this course. The TI-84 Plus is recommended.

| **IV.** | **Evaluation/grading (policy and basis; number and frequency of tests and papers; weights of particular tests or papers; etc.):** |

Semester grades are largely determined by performance on hour exams and a comprehensive final exam. Other factors that may be used in determining grades are homework, pop quizzes, recitation, and attendance. Letter grade assignments will be based upon the ten-point scale.

| **V.** | **Policies pertaining to attendance, late work, make-up work, etc.:** |

Students are expected to attend class on a regular basis.   Any hour exam which is missed will be made up on a pro-rata basis on the final examination. For example, if a student misses Exam #2, then those questions on the final examination which pertain to the topics tested on Exam #2 will determine the student's grade on Exam #2. If a student earns 40 of 50 possible points, from those questions only, then the student earns 80% on Exam #2.

| **VI.** | **Course objectives:** |

   A. Development of an understanding, awareness, and appreciation of mathematics.
   B. Enhancement of problem solving abilities.
   C. Enhancement of mathematical communication skills, both in written and oral form.
   D. Improvement of critical thinking and reasoning abilities.
   E. Enhancement of understanding of mathematical structure and operations.
   F. Increased use of multi-media technology as a tool for both learning and performing mathematics.

G. Heightened awareness of the connectiveness of mathematics, and also its relationship with both other disciplines and the real world.

VII.	Major instructional objectives:

The student should emerge from this class with:

1. A knowledge of certain techniques of integration and a facility with improper integrals;

2. An introduction to approximate integration;

3. A familiarity with polar coordinates and parametric equations and the calculus of these topics;

4. A thorough introduction to series of constants and power series;

5. A working knowledge of vectors and vector functions and their derivatives; and

6. A very brief introduction to the mechanical calculation of partial derivatives.

III.	Brief summary of course content by major units of instruction:

A. Techniques of Integration
1. Integration by Parts
2. Trigonometric Integrals
3. Trigonometric Substitution
4. Integration of Rational Functions by Partial Fractions
5. Approximate Integration
6. Improper Integrals
B. Parametric Equations and Polar Coordinates
1. Curves Defined by Parametric Equations
2. Calculus with Parametric Curves
3. Polar Coordinates
4. Areas and Lengths in Polar Coordinates
5. Conic Sections
C. Infinite Sequences and Series
1. Sequences
2. Series
3. The Integral Test and Estimates of Sums
4. The Comparison Tests
5. Alternating Series
6. Absolute Convergence and the Ratio and Root Tests
7. Strategy for Testing Series
8. Power Series
9. Representations of Functions as Power Series
10. Taylor and Maclaurin Series
11. Applications of Taylor Polynomials

D. Vectors and the Geometry of Space
1. Three-Dimensional Coordinate Systems
2. Vectors
3. The Dot Product
4. The Cross Product
5. Equations of Lines and Planes
6. Cylinders and Spherical Coordinates
E. Vector Functions
1. Vector Functions and Space Curves
2. Derivatives and Integrals of Vector Functions
3. Arc Length and Curvature
F. Partial Derivatives
1. Partial Derivatives

IX.	Methods of instruction:

The chief method of instruction is the lecture method along with class discussions of the subject matter.

X.	Brief overview of special instructions:

Students may seek tutorial assistance in the Tutorial Center.

XI.	Bibliography of supplemental references and/or source materials:

None.

ADS	(Americans with Disabilities Act) Statement

Any student who is a "qualified individual with a disability" as defined by Section 504 of the Rehabilitation Act and Title II of the ADA, and who will need accommodated services (e.g., note takers, extended test time, audiotape, tutorials, etc.) for this course must register and request services through the Office of Academic Assistance Programs, S-150.

CSD	CODE OF STUDENT CONDUCT

LSUE enforces discipline on campus to protect the academic environment of the campus and the health and safety of all members of the University community. To accomplish this objective, the University enforces standards of conduct for its students. Students who violate these standards can be denied membership in the LSUE community through imposition of disciplinary sanctions.

The LSUE Code of Student Conduct can be found on the LSUE website (lsue.edu). Follow the "Current Students" link from the homepage, and then click on "Student Handbook."